1-2003

BIOL 250.01: Rocky Mountain Flora

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The University of Montana

Biology 250: Rocky Mountain Flora Spring 2003

Lectures: T, Th 10-11 am, Natural Sciences (NS; aka Botany) Bldg. room 307
Lab: W 1-3 or W 3-5, or F 1-3 Natural Sciences Bldg. 208
Walkabouts: weekly-- TBA

Instructor: Dr. Brad Cook, bjcook@selway.umt.edu, 243-5382
Office hours: Natural Sciences, room 115; M and T from 11am-noon or by appointment
Teaching assistant: Jedediah Brodie, jedediah_brodie@yahoo.com
Office hours: TBA

Required texts and equipment:

Dorn, R.D. 1984. Vascular Plants of Montana. Mountain West Publishing, Box 1474, Cheyenne, WY. ($18/13.50)
Woodland, D.W. Contemporary Plant Systematics 3rd ed. Andrews University Press. Berrien Springs, MI. ($68/49)
Plant dissection kit ($5.50)

Optional texts and equipment:

10x or 15x loupe
Kershaw, L., A. MacKinnon, and J. Pojar. 1998. Plants of the Rocky Mountains. Lone Pine Publishing. Edmonton, AB, Canada. ($20)
Parish, R., R. Coupe, and D. Lloyd. 1996. Plants of Southern Interior British Columbia and the Inland Northwest. Lone Pine Publishing. Edmonton, AB, Canada. ($20)- **out of print**
Lackschewitz, K. 1991. Vasucular Plants of West-Central Montana: Identification guidebook. USDA, Forest Service, Intermountain Research Station, General Tech. Report. INT-277. ($43)
Hitchcock, C.L. and A. Cronquist. 1973. Flora of the Pacific Northwest. University of Washington Press. Seattle, WA. ($60)
T.J. Elpel. 2000. Botany in a Day: Herbal Field Guide to Plant Families. ($22.50)

Course Objectives.

1. Learn skills to identify plants
   a. Learn basic terminology used in plant identification
   b. Become proficient with plant identification "keys"
2. Sight recognition of common plants of the Rocky Mountains
   a. Learn to recognize 35 plant families
   b. Learn to recognize approximately 60 dominant plant species
3. Learn techniques of collecting and preserving plants for future identification and study.
4. Introduce topics relevant to plant systematics including adaptive evolution, the history of plant taxonomy, pollination biology, and species diversity
5. Introduce relevant topics in plant community ecology and phytogeography of Rocky Mountain Flora

Grading:

Lecture Exam 1:	100
Lecture Exam 2:	100
Final Exam:	150
Final Lab Exam:	75
Lab Quizzes (15pts each)	75
Plant Collection:	50
Total points possible:	**550**

A=100-90%, B=89-80%, C=79-70%, D=69-60%, F=<59%
For Pass/non-pass: Pass >70% and Non-pass <70%

How to succeed in this course. Do not miss lecture or lab. There is A LOT of terminology and you must keep up as it is presented or you will soon become overwhelmed. Spend a few hours each week reviewing lab and lecture notes, pay special attention to the core terminology handout, and **begin reading/studying Chapter 7 in Woodland right away**. You will basically be learning a new language, and if you fail to learn the important terms it will be exceedingly difficult to keep up with learning the plant families and relating them to each other. **PLEASE come to office hours or make an appointment if you need help.**

BIO 250 Schedule

Week/Date		Lecture/Lab	Topic	Readings in Woodland
Week 1				
January	28	Lecture	Introduction, course objectives and requirements	pp. 1-4
	29	Wednesday Labs	Collecting plants and dichotomous keying	pp. 13-28
	30	Lecture	Plant classifications	pp. 361-82
	31	Friday Lab	Collecting plants and dichotomous keying	pp. 13-28
Week 2				
February	4	Lecture	Botanical nomenclature	pp. 5-12
	5	Wednesday Labs	**Quiz 1-terminology and nomenclature**	
	6	Lecture	Bryophytes and Lichens	handout
	7	Friday Lab	**Quiz 1-terminology and nomenclature**	
Week 3				
February	11	Lecture	Pteridophytes: ***Polypodiaceae***, ***Equisetaceae***, and ***Lycopodiaceae***	pp. 29, 31-33, 35, & 38
	12	Wednesday Labs	Bryophytes and Pteridophytes	
	13	Lecture	Vegetative and floral morphology	pp. 80-100, 105-8
	14	Friday Lab	Bryophytes and Pteridophytes	
Week 4				
February	18	Lecture	Vegetative and floral morphology	pp. 80-100, 105-8
	19	Wednesday Labs	**Quiz 2- recognition and identification**; Veg/floral morph	
	20	Lecture	Gymnosperms: ***Pinaceae***, ***Taxaceae*** and ***Cupressaceae***; **+9 genera**	pp. 58-59, 62, 66, & 69-70, 72-73, 76
	21	Friday Lab	**Quiz 2- recognition and identification**; Veg/floral morph	
Week 5				
February	25	Lecture	Plant Sex!	pp. 100-5
	26	Wednesday Labs	Gymnosperms; Keying	
	27	Lecture	Angiosperms: Magnoliidae- ***Ranunculaceae*** and ***Berberidaceae***	pp. 109-10, 112, & 126
	28	Friday Lab	Gymnosperms; Keying	
Week 6				
March	4	Lecture	**Exam 1**	
	5	Wednesday Labs	**Quiz 3-Keying; *Ranunculaceae*** and ***Berberidaceae***	
	6	Lecture	Rosidae: ***Rosaceae***, ***Saxifragaceae***, ***Apiaceae***, and ***Aceraceae***	pp. 206, 215-6, 26
	7	Friday Lab	**Quiz 3-Keying**; ***Ranunculaceae*** and ***Berberidaceae***	
Week 7				
March	11	Lecture	More Rosidae: ***Fabaceae***, ***Grossulariaceae***, and ***Onagraceae***	pp. 213, 221, 230
	12	Wednesday Labs	Rosidae: FROGS AA	
	13	Lecture	Asteridae: ***Asteraceae*** and ***Boraginaceae***	pp. 276, 287, 310
	14	Friday Lab	Rosidae: FROGS AA	
Week 8				
March	18	Lecture	More Asteridae: ***Caprifoliaceae***, ***Lamiaceae*** and ***Schrophulariaceae***	pp. 289, 294, 306
	19	Wednesday Labs	Asteridae; Recognition and Keying	
	20	Lecture	Still more Asteridae: ***Hydrophyllaceae*** and ***Polemoniaceae***	pp. 285, 286
	21	Friday Lab	Asteridae; Recognition and Keying	
Week 9				
March 24-28		**Spring Break**		

Week 10				
April	1	Lecture	XID software for plant identification	handout
	2	Wednesday Labs	**Quiz 4-recognition and identification**; Asteridae-CAPH BLS	
	3	Lecture	Hamamelidae: ***Betulaceae*** and Dilleniidae: ***Salicaceae***; **+4 genera**	pp. 130, 142, 156, & 187
	4	Friday Lab	**Quiz 4-recognition and identification**; Asteridae-CAPH BLS	
Week 11				
April	8	Lecture	Review for Exam 2	
	9	Wednesday Labs	***Betulaceae*** and ***Salicaceae***; Keying	
	10	Lecture	**Exam 2**	
	11	Friday Lab	***Betulaceae*** and ***Salicaceae***; Keying	
Week 12				
April	15	Lecture	Dilleniidae: ***Brassicaceae*** and ***Ericaceae***	pp. 189, 195
	16	Wednesday Labs	**Quiz 5- Keying**; ***Brassicaceae*** and ***Ericaceae***	
	17	Lecture	Caryophyllidae: ***Cactaceae***, ***Caryophyllaceae***, and ***Polygonaceae***	pp. 144, 148, 153-4
	18	Friday Lab	**Quiz 5- Keying**; ***Brassicaceae*** and ***Ericaceae***	
Week 13				
April	22	Lecture	Liliopsida- Commelinidae: ***Poaceae***	pp. 330, 227
	23	Wednesday Labs	***Cactaceae***, ***Caryophyllaceae***, and ***Polygonaceae***; Keying	
	24	Lecture	Commelinidae: ***Cyperaceae*** and ***Juncaceae***	pp. 335-6
	25	Friday Lab	***Cactaceae***, ***Caryophyllaceae***, and ***Polygonaceae***; Keying	
Week 14				
April	29	Lecture	Liliopsida- Liliidae: ***Orchidaceae***, ***Iridaceae*** and ***Liliaceae***	pp. 349, 352-3, 360
	30	Wednesday Labs	Commelinidae; keying	
May	1	Lecture	Liliidae	
	2	Friday Lab	Commelinidae; keying	
Week 15				
May	6	Lecture	Phytogeography	
	8	Wednesday Labs	**Lab Final;** keying and recognition (same time, same room)	
	9	Lecture	Review for Final Exam	
	10	Friday Lab	**Lab Final**; keying and recognition (same time, same room)	
Week 16				
May	12-16	**Finals Week**		
	15	**Final Examination:** Friday, 8-10am; Same room as lecture (Natural Sciences 307)		